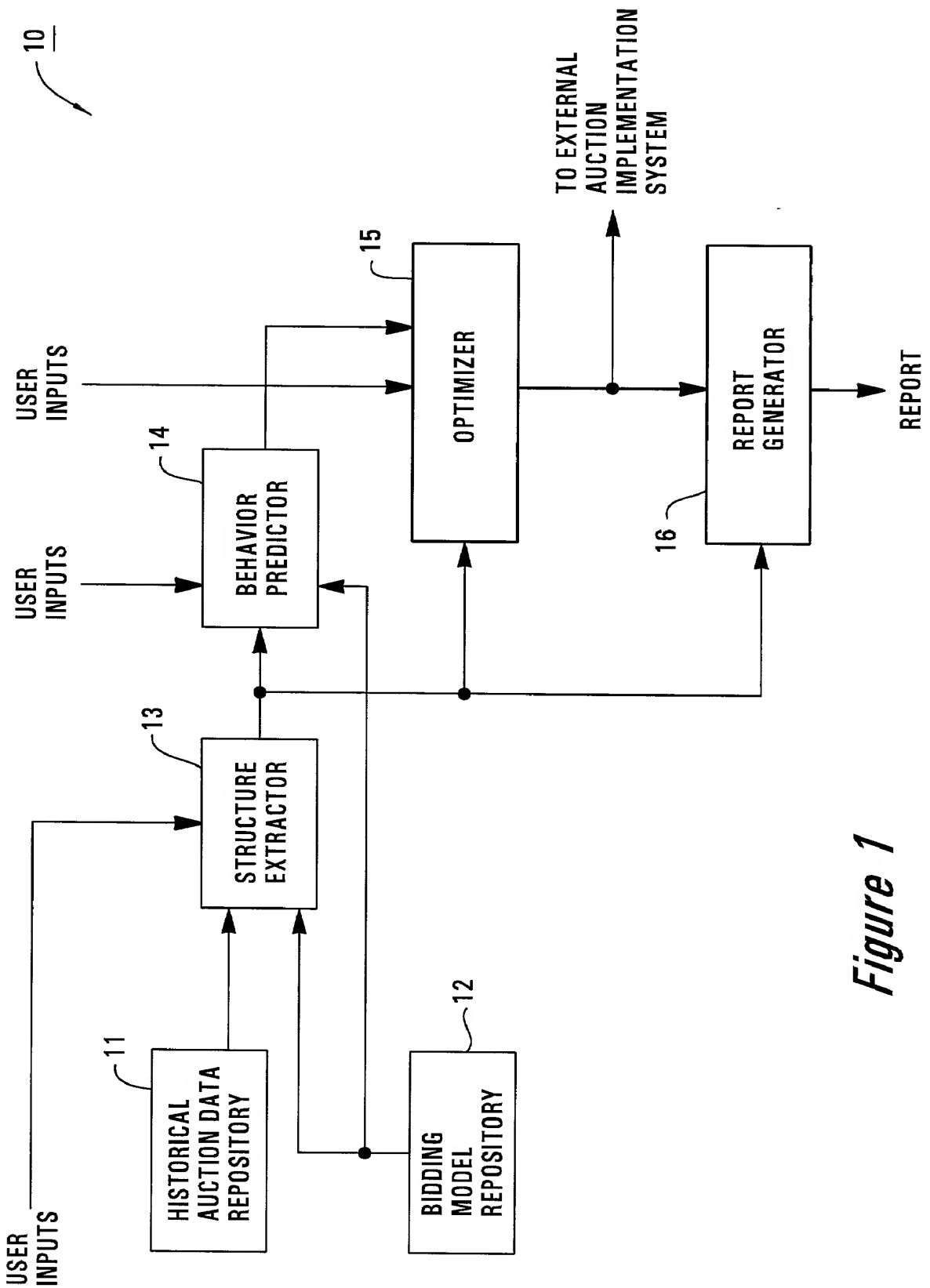

10
USER INPUTS
USER INPUTS
USER INPUTS
BEHAVIOR PREDICTOR
14
STRUCTURE EXTRACTOR
13
HISTORICAL AUCTION DATA REPOSITORY
11
BIDDING MODEL REPOSITORY
12
OPTIMIZER
15
TO EXTERNAL AUCTION IMPLEMENTATION SYSTEM
REPORT GENERATOR
16
REPORT

Figure 1

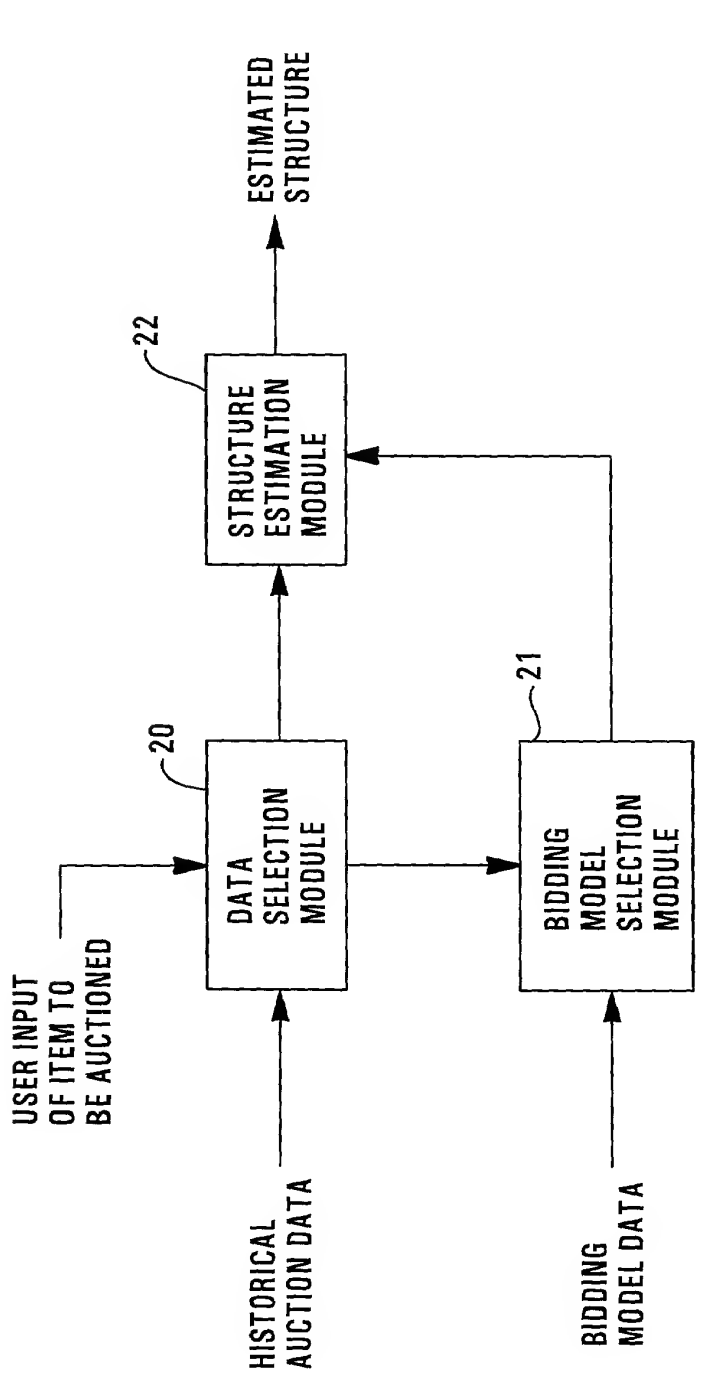

13
ESTIMATED STRUCTURE
22
STRUCTURE ESTIMATION MODULE
20
DATA SELECTION MODULE
21
BIDDING MODEL SELECTION MODULE
USER INPUT OF ITEM TO BE AUCTIONED
HISTORICAL AUCTION DATA
BIDDING MODEL DATA

Figure 2

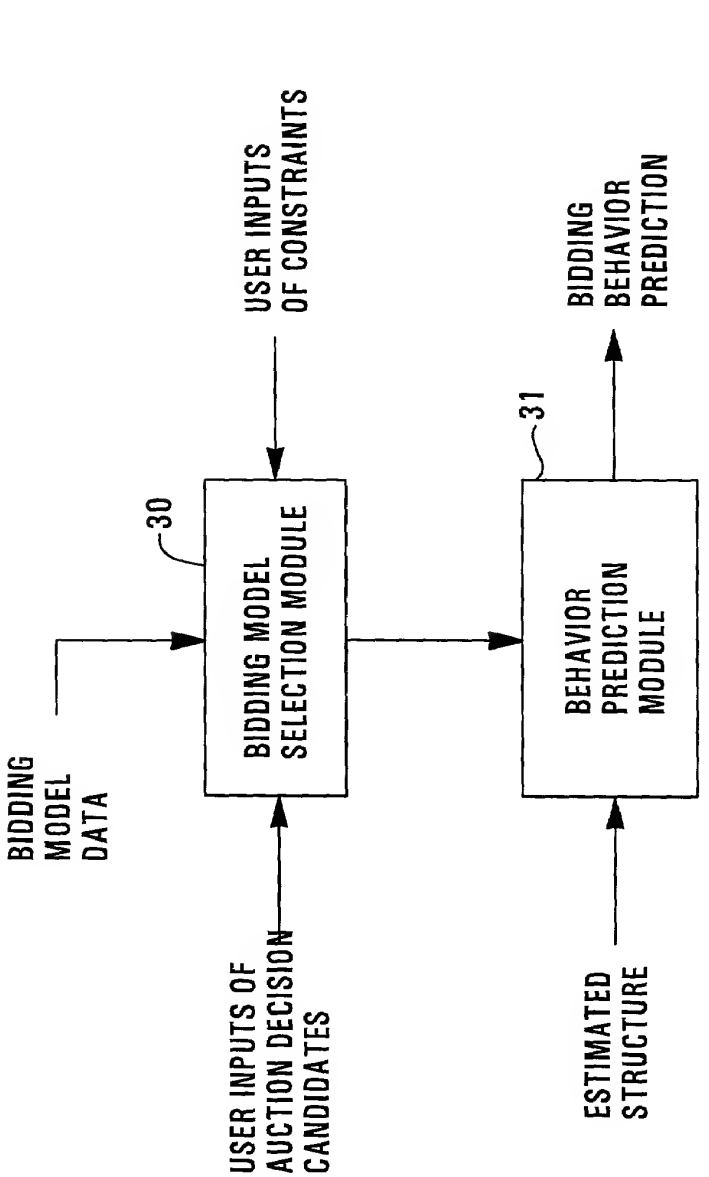
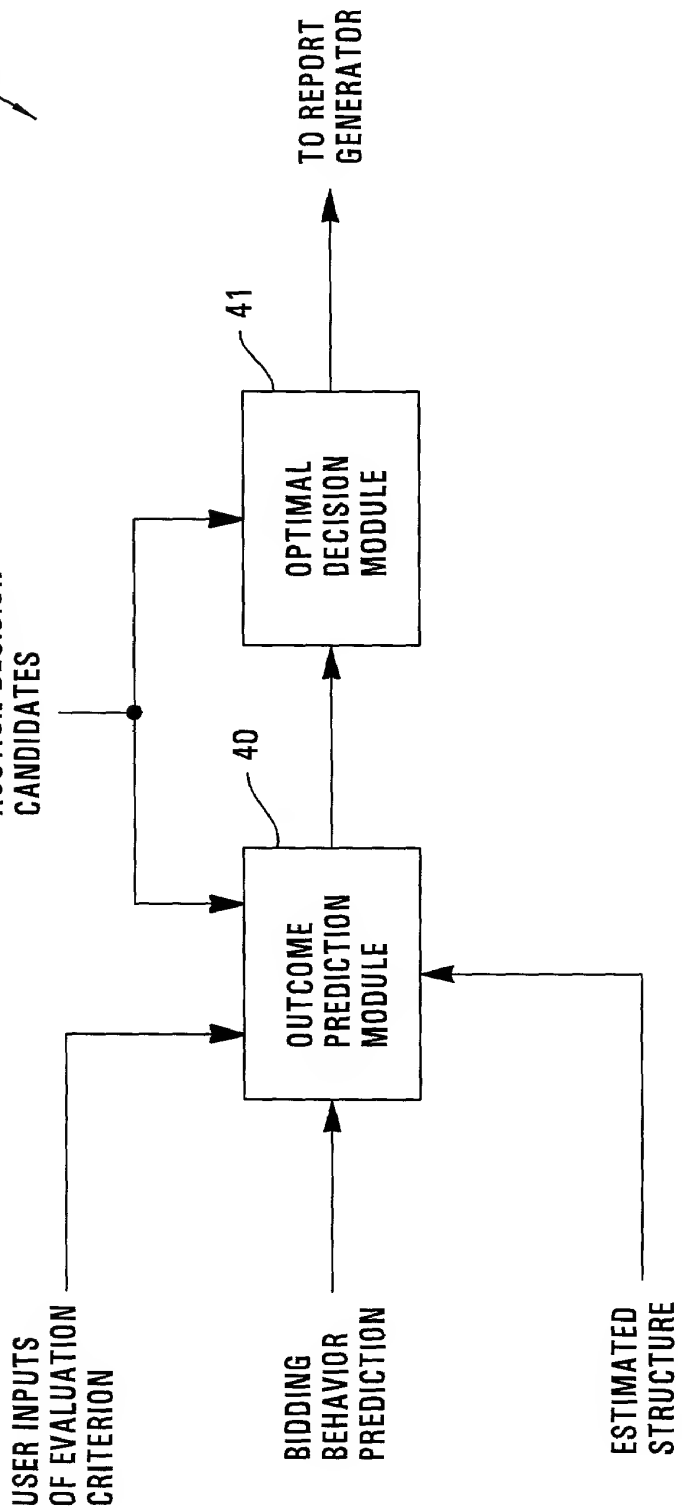

14
USER INPUTS OF CONSTRAINTS
BIDDING BEHAVIOR PREDICTION
30
31
BIDDING MODEL SELECTION MODULE
BEHAVIOR PREDICTION MODULE
BIDDING MODEL DATA
USER INPUTS OF AUCTION DECISION CANDIDATES
ESTIMATED STRUCTURE

Figure 3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TO REPORT GENERATOR
41
OPTIMAL DECISION MODULE
USER INPUTS OF AUCTION DECISION CANDIDATES
40
OUTCOME PREDICTION MODULE
USER INPUTS OF EVALUATION CRITERION
BIDDING BEHAVIOR PREDICTION
ESTIMATED STRUCTURE

Figure 4

DATA SELECTION MODULE

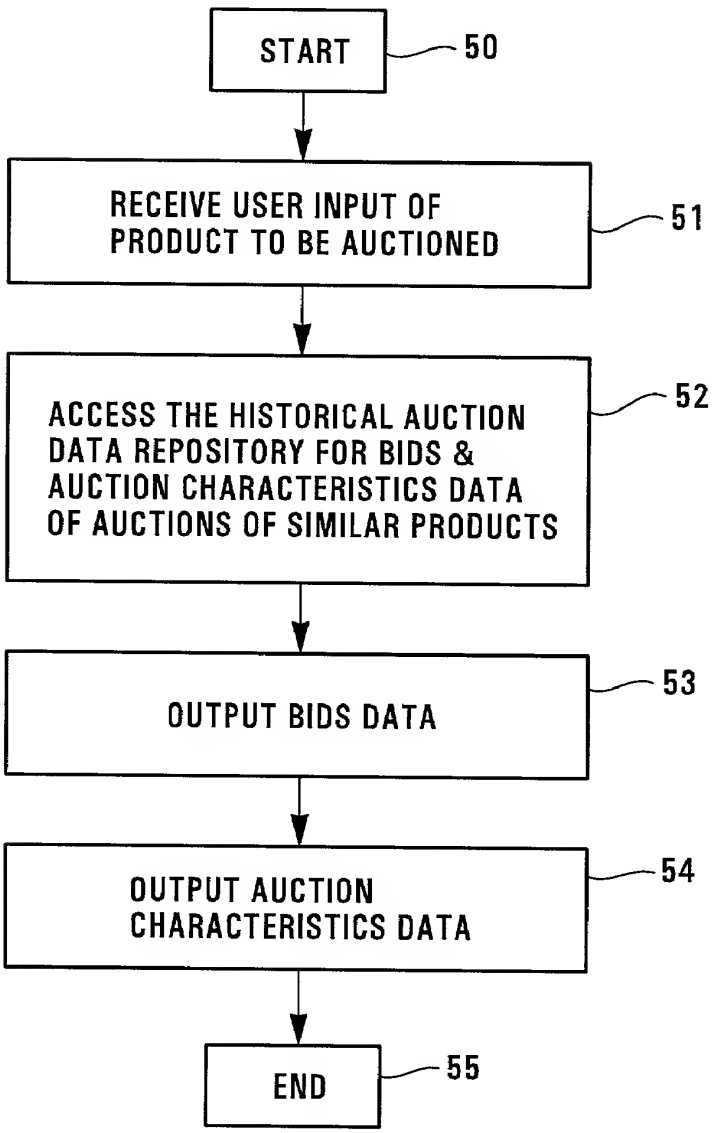

Figure 5

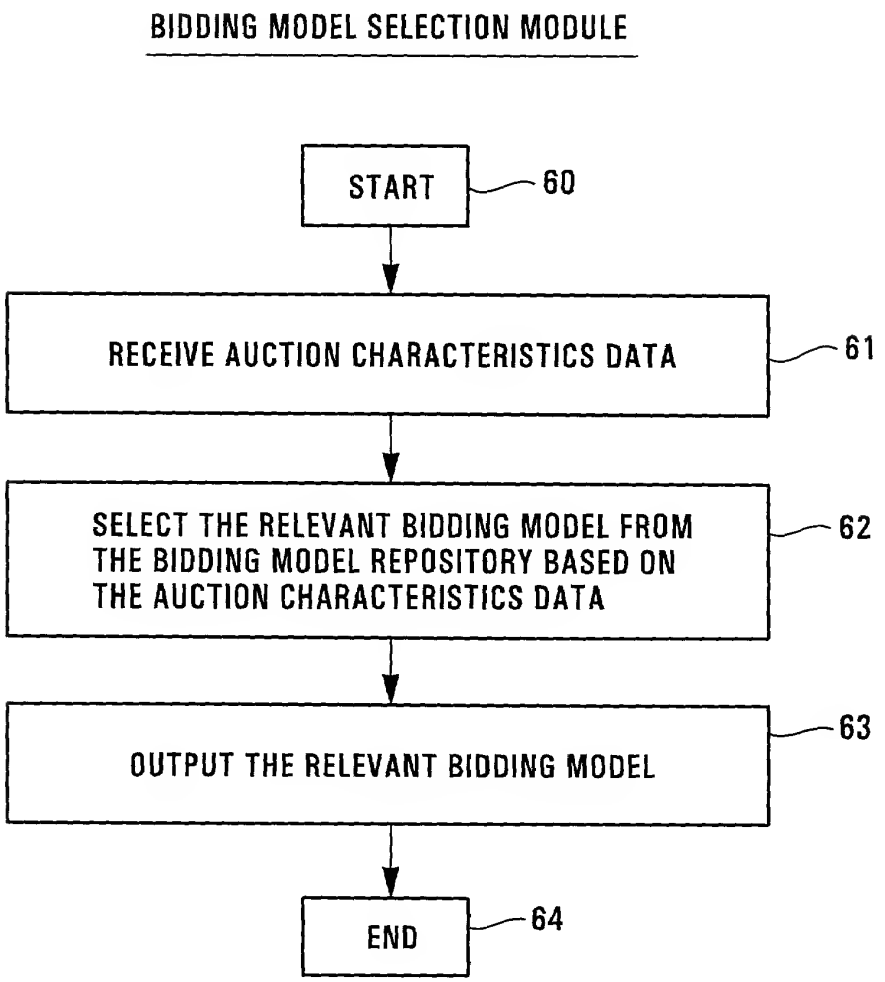
BIDDING MODEL SELECTION MODULE
START
60
RECEIVE AUCTION CHARACTERISTICS DATA
61
SELECT THE RELEVANT BIDDING MODEL FROM THE BIDDING MODEL REPOSITORY BASED ON THE AUCTION CHARACTERISTICS DATA
62
OUTPUT THE RELEVANT BIDDING MODEL
63
END
64

Figure 6

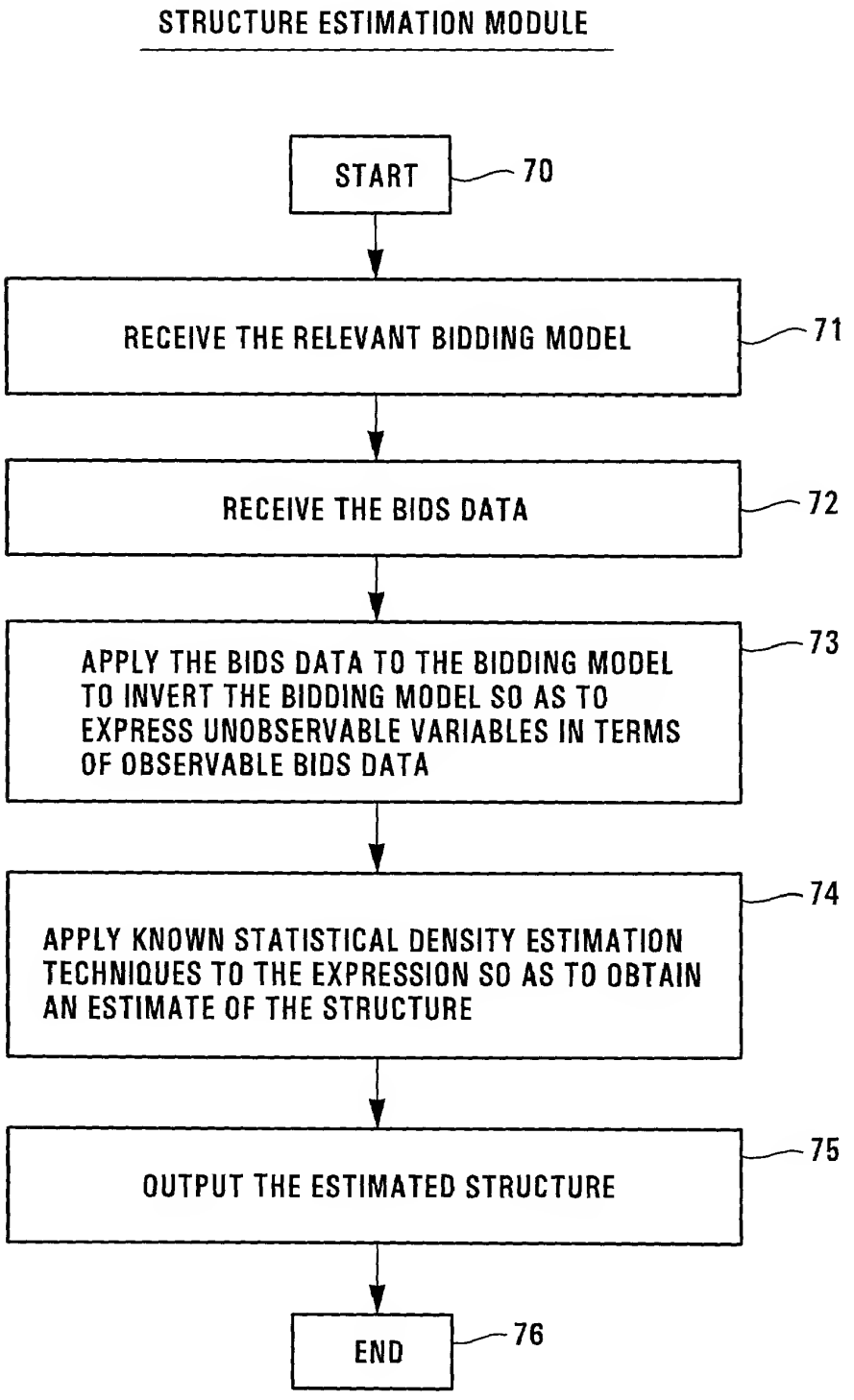
STRUCTURE ESTIMATION MODULE
START
70
RECEIVE THE RELEVANT BIDDING MODEL
71
RECEIVE THE BIDS DATA
72
APPLY THE BIDS DATA TO THE BIDDING MODEL TO INVERT THE BIDDING MODEL SO AS TO EXPRESS UNOBSERVABLE VARIABLES IN TERMS OF OBSERVABLE BIDS DATA
73
APPLY KNOWN STATISTICAL DENSITY ESTIMATION TECHNIQUES TO THE EXPRESSION SO AS TO OBTAIN AN ESTIMATE OF THE STRUCTURE
74
OUTPUT THE ESTIMATED STRUCTURE
75
END
76

Figure 7

BEHAVIOR PREDICTION MODULE

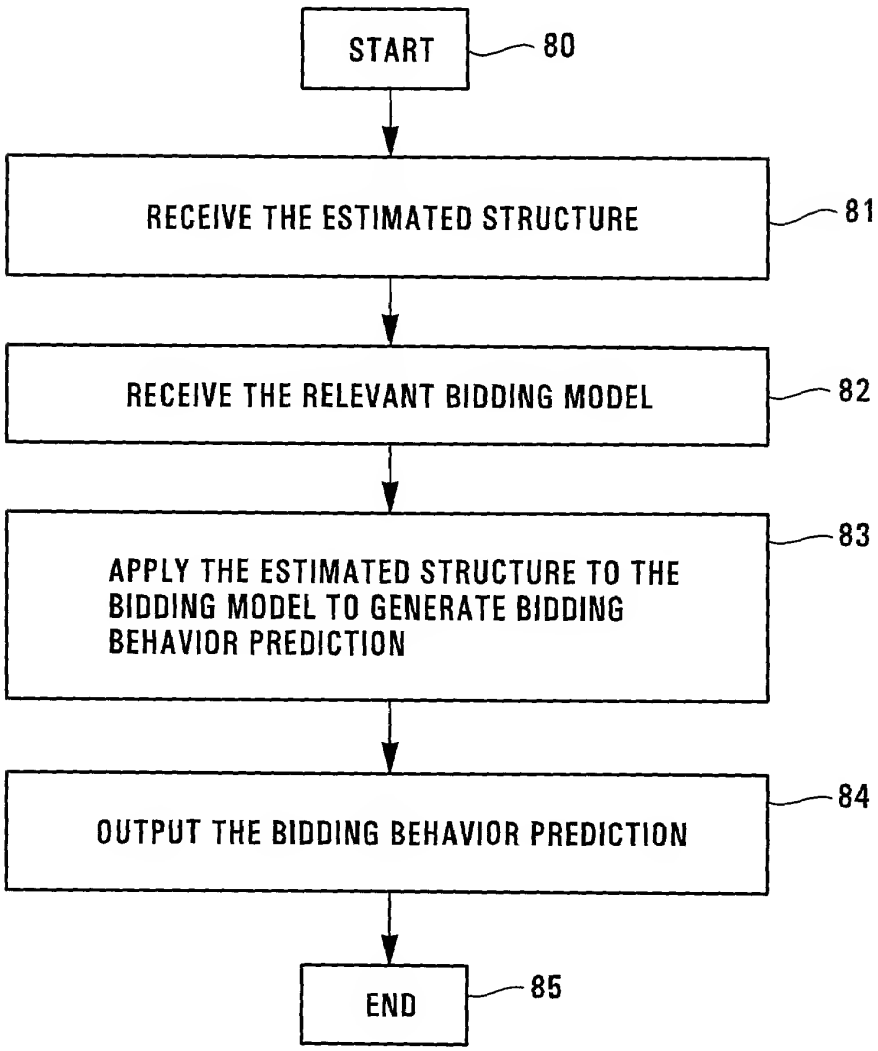

Figure 8

OUTPUT PREDICTION MODULE

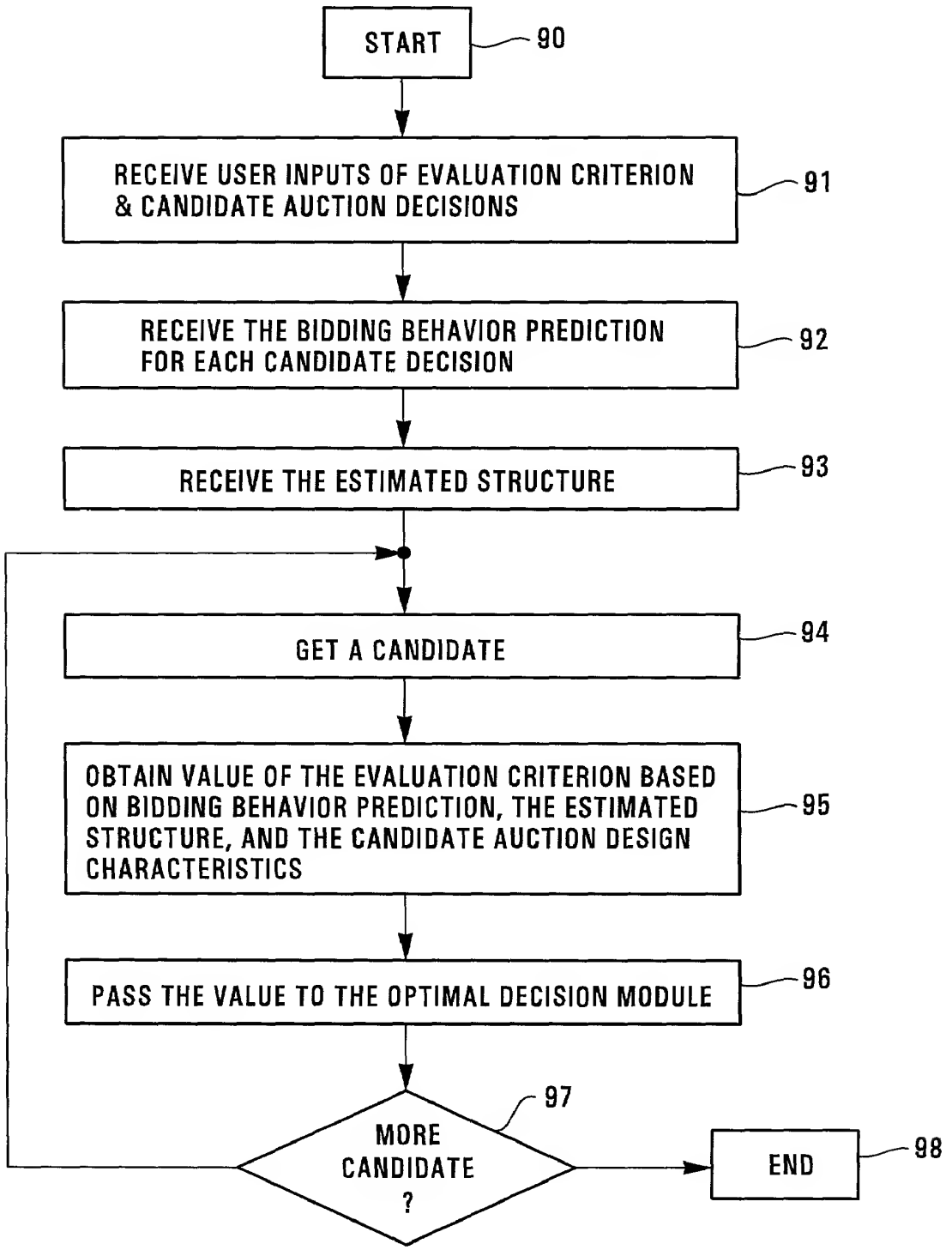

Figure 9

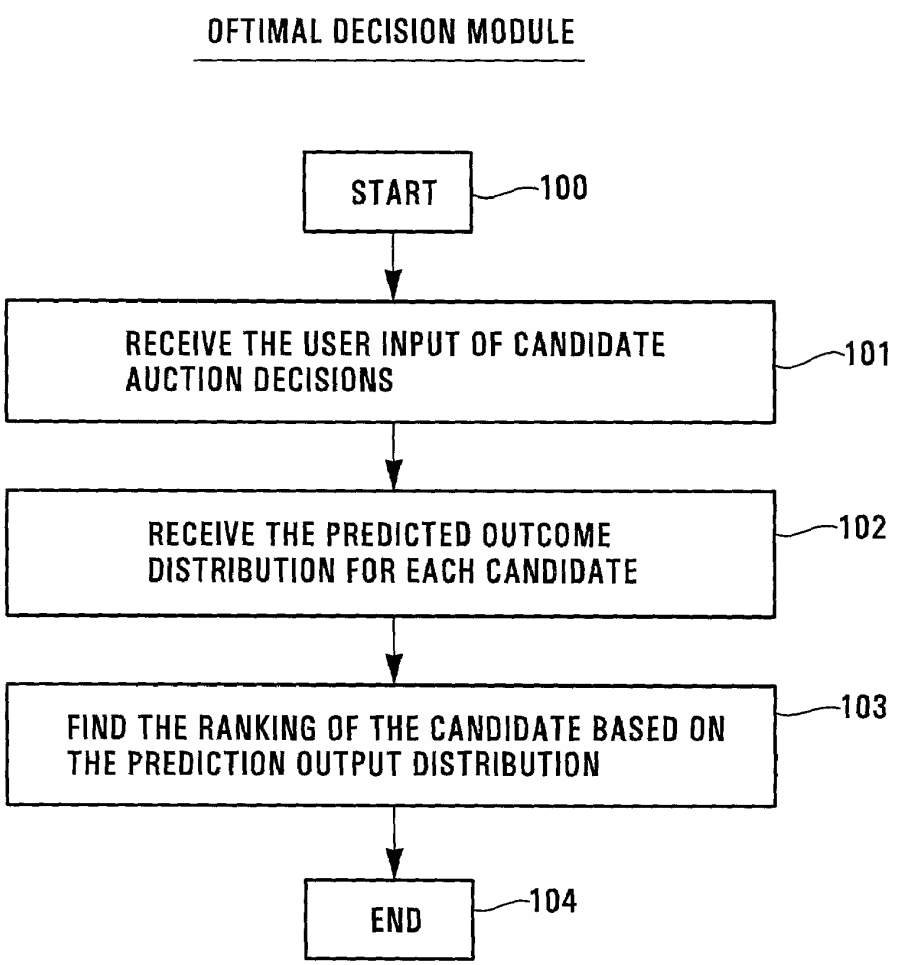
OFTIMAL DECISION MODULE
START
100
RECEIVE THE USER INPUT OF CANDIDATE AUCTION DECISIONS
101
RECEIVE THE PREDICTED OUTCOME DISTRIBUTION FOR EACH CANDIDATE
102
FIND THE RANKING OF THE CANDIDATE BASED ON THE PREDICTION OUTPUT DISTRIBUTION
103
END
104

Figure 10